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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,371

05/23/2008

Tetsuo Nagano

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7055 7590 04/01/2009  
GREENBLUM & BERNSTEIN, P.L.C.  
1950 ROLAND CLARKE PLACE  
RESTON, VA 20191

EXAMINER

GALLIS, DAVID E

ART UNIT

PAPER NUMBER

1625

NOTIFICATION DATE

DELIVERY MODE

04/01/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,371	<b>Applicant(s)</b> NAGANO ET AL.	
	<b>Examiner</b> DAVID E. GALLIS	<b>Art Unit</b> 1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 5 and 8-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/29/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Claims 1 through 11 are pending. Claims 1 through 6 have been amended. Claims 7 through 11 have been newly added. Applicants' claim to foreign priority by application JAPAN 2004-060080 filed March 4, 2004 is acknowledged, however, Applicants' priority claim remains to be perfected with a translation of the foreign priority document.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagano et al. (JP 2000239272, September 5, 2000, cited by Applicants, translation attached).

4. Claim 1 is drawn to a fluorescent probe of formula (I), wherein R<sup>1</sup> and R<sup>2</sup> may combine to form a ring structure for trapping a metal ion. Claim 4 further limits claim 1, wherein the metal ion is a zinc ion.

5. Nagano et al. clearly anticipate claims 1 and 4 by teaching a compound of formula (I) comprising a ring structure on the phenyl moiety capable of trapping a zinc ion (see Abstract first sentence and ¶0008, formula (II)).

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 1, 3, 6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Lam et al. (Provisional Application 60/469031, May 9, 2003).

8. Claim 1, 3, 6 and 7 are anticipated by Lam et al. teaching phenyl xanthene dyes comprising an overlapping genus with that instantly claimed (see page 39, Example 1, structure 140). Lam et al. teach phenyl group substituents of alkyl, heteroalkyl, alkoxy, halo, haloalkyl, amino, alkylthio, cyano, isocyano, cyanato, mercaptocyanato, nitro, and sulfonyl (see page 22, lines 1 and 2), of which, at least alkyl, alkoxy, halo, and amino are exemplified by the instant disclosure as useful in trapping a proton, a metal ion, or an active oxygen species.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 and 2 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the preparation of the claimed formula (I)

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compound itself, does not reasonably provide enablement for determining the claimed electronic properties of the benzene ring. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to determine the electron density or oxidation potential of the benzene ring before and after trapping a proton, a metal ion, or an active oxygen species. While it is understood that these properties can be assessed for the compound claimed, it is unclear how these determinations are made for the functional group itself.

“The factors to be considered [in making an enablement rejection] have been summarized as a) the quantity of experimentation necessary, b) the amount of direction or guidance presented, c) the presence or absence of working examples, d) the nature of the invention, e) the state of the prior art, f) the relative skill of those in that art, g) the predictability or unpredictability of the art, h) and the breadth of the claims”, *In re Rainer*, 146 USPQ 218 (1965); *In re Colianni*, 195 USPQ 150, *Ex parte Formal*, 230 USPQ 546.

a) Developing a procedure for determining electron density and oxidation potential of a functional group would require a large quantity of experimentation. b) The direction concerning this determination is lacking in the specification. c) There is no working example of electron density measurements presented in the specification. d) The nature of the invention is photo- and electro-chemical in nature. e) The state of the art currently lacks any standard method of quantifying electron density in a compound's functional groups. f) Artisans using Applicants' invention would require a Ph.D. in physical chemistry and several years of research experience. g) It is well established that “the scope of enablement varies inversely with the degree of unpredictability of the

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factors involved", and specific electron density values of functional groups are generally considered to be an unpredictable factor. h) The breadth of the claims includes properties that are not measurable within a functional group itself.

### ***Claim Objections***

9. Claims 5 and 8 through 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Gallis whose telephone number is 571-272-9068. The examiner can normally be reached on Mon-Thur 8:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571-272-1600. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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David E. Gallis  
Patent Examiner

/ Bernard Dentz/

Primary Examiner, Art Unit 1625